DOCUMENT RESUME

ED 290 040 CE 049 423

AUTHOR Camp, William G.; And Others
TITLE Student Participation in Vocational Student Organizations and Grades for the Sophomore Class of 1980 in America.
PUB DATE Dec 87
NOTE 10p.; Paper presented at the American Vocational Association Convention (Las Vegas, NV, December 6-10, 1987).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; Grade Point Average; High Achievement; *High School Students; *Outcomes of Education; Secondary Education; Student Characteristics; *Student Organizations; *Student Participation; *Vocational Education
IDENTIFIERS *High School and Beyond (NCES)

ABSTRACT

A study was conducted to examine the effect of participation in vocational youth organizations on vocational student success in school, as measured by grades, while controlling for the effects of other variables that could reasonably be expected to have an impact on those grades. The research method was secondary analysis of an existing large-scale database, High School and Beyond 1980, sophomore cohort. The second follow up (1984) was the source of the data for this study. A sample of 5,737 vocational students was selected, and various data pertaining to their achievements as seniors were examined. Other factors examined were sex, race, family income, hours of homework per week, hours spent watching television per week, basic ability, parents' education, postsecondary educational plans, and number of new basics courses completed. The predictor variable of primary interest was student activity level, and the criterion variable identified was student grade point average at the completion of the senior year. Multiple regression analysis showed that participation in vocational student organizations produced a positive contribution to student achievement as measured by student grades. (KC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

Student Participation in Vocational Student Organizations And Grades for the Sophomore Class of 1980 in America

William G. Camp, Virginia Tech

K. K. Navaratnum, Virginia Tech

Bradford J. Jeffreys, Oregon State University

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
W G Camp
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

ED290040

CE049423

In the continuing controversy in this country regarding what is generally referred to as the "back to basics" movement, one area of concern for many has been the place of extracurricular activities in the public school curriculum (Jeffreys, 1987). One point of view that has been espoused, is that time spent on non-class activities is time lost from productive learning and, hence, from educational attainment resulting from school. Wolfle (1985) has shown convincing evidence that an important variable having a causal relationship to educational attainment, measured primarily by student grades, is time spent on homework.

Critics argue that such non-class activities would include participation in vocational youth organizations. Thus, presumably, participation by vocational students in their respective co-curricular organizations would be held to be counterproductive in terms of overall educational attainment. On the other hand, proponents of vocational student organizations argue that student participation is an integral component of the overall educational experience for those students (Jeffreys, 1987).

McNamara, Haensly, Lupkowski, & Edlind (1985) found a positive association between level of participation in vocational student organization and grade point average. A number of studies (Baly,

---

Paper presented at The American Vocational Education Research Association annual meeting, Las Vegas, Nevada, December, 1987.

1984; Braddock, 1981; Elder, 1985; Peterson, 1984; Smith, 1981; Spady, 1970; and Spady, 1971) looked at biographical and situational variables and their relationship with student participation in extra-curricular activities, such as sex, race, self concept, grades, socio-economic status, and others. In general, there is a plethora of literature and research in this area.

Statement of Purpose

The purpose of this study was to examine the effect of participation in vocational youth organizations on student overall success in school, as measured by grades, while controlling for the effects of other variables which could reasonably be expected to impact on those grades.

Research Method

The research method was secondary analysis of an existing large-scale data base, High School and Beyond, HSB 1980, sophomore cohort (National Opinion Research Center, 1984). The analysis required the "cleaning up" of the data, converting it to a SAS system file configuration, and subsequent statistical analysis. Statistical procedures used were: simple descriptive statistics; multiple correlation; and multiple regression with the full model, including second degree and third degree exponential expansions (for curvilinear relationships).

Data Source and Sampling Design

The source of data for the study was the High School and Beyond (HSB), sophomore cohort of 1980 in the United States. This particular data base provides an extensive set of information on a national probability sample of public and private secondary schools

in the United States. It includes samples of both the senior class and the sophomore class of 1980. The group chosen for this study was the sophomore cohort of 1980. HSB surveyed the sophomore cohort in 1980 then followed them up in 1982 and again in 1984. The second followup (NORC, 1984) data tape is the source of the data for the present study.

The sample for the HSB data set was selected using a probability sampling design. Selected special populations were over-sampled to insure adequate representation in the final sample: Hispanics, students in Catholic schools with a high proportion of blacks, public alternative school students, and high-achieving students. With those exceptions, the sample was taken to be representative of the population of United States sophomores in 1980.

For the base year (1980), a total in excess of 30,000 sophomores in 1,015 high schools from throughout the United States participated. In the first followup (1982), 29,737 participated. Those students in the first follow-up who reported themselves as vocational students were then selected for the sub-sample examined for this study. That step produced an N of 5737.

Instruments

The HSB data set was constructed from the following survey instruments collected over a period of approximately 2 years:

1. a questionnaire completed by school personnel;
2. a student identification (demographics) questionnaire;
3. a series of cognitive tests;
4. a sophomore questionnaire;
5. a parent questionnaire;
6. a teacher comments checklist.

7. student transcript data collected from the schools, at the end of the 1982 school year.

Exogenous variables examined were those that the literature review indicated should impact both on level of student activity and on high school grade point average: sex, race, family income, hours of homework per week, hours spent watching television per week, basic ability (estimated by a composite of a series of math, language, and basic skills sub-tests administered during sophomore year), parents' reported education, postsecondary educational plans, and number of new basics courses completed.

The predictor variable of primary interest was student activity level. That had to be constructed from a series of 17 other variables, such as participation in sports and vocational clubs. For the purposes of this study, student activities were divided into sports/sports associated, vocational organization, and other activities.

The criterion variable was student grade point average at the conclusion of the 1981-82 school year, which was assumed to be the completion of the senior year. Grade point average was computed from transcript data reported by participating schools, on a 5.0 scale.

As anyone who has worked with this particular data set understands, the data required extensive recoding to set meaningless values to missing and to convert non-numerical observations to data that could be analyzed. Recoding also was done to set race and sex up as dummy variables. To correct for the over-sampling of selected population subgroups, weighting factors were applied to the data analysis.

Findings and Conclusions

The variables identified and used in the regression model were: vocational activity, sports activity, other activities, hours spent on homework per week, aptitude test composite, hours per day spent watching TV, father's education, mother's education, family income, family size, post-secondary plans, credits in "new basics" courses, sex, and race (Hispanic, native American, Asian/Pacific islander, black, white), see table 1.

An examination of table 1 shows that the initial sample size was 10,085. Not all variables were reported for the full sample -- a rather common problem in secondary analysis. The statistical treatment throughout excluded missing data from the analysis. There were slightly more females than males in the sample. In terms of number, whites were followed by Hispanics, blacks, Asian/Pacific islanders, and native Americans, in order.

Most of the remaining variables are less directly interpretable, because they are categorical in nature. The data are presented primarily to make possible reexamination by other researchers. For a full explanation of the meaning of the variables and their category values, the reader is encouraged to refer to the High School and Beyond (NORC, 1984) manual.

Table 1

Means, standard deviations, minimum and maximum values, and N for selected variables weighted to correct for sampling procedures

Variable	Mean	Standard Dev.	Minimum Value	Maximum Value	N
Grade Point Average	2.63	0.62	0.75	4.00	10,041
Vocational Activityd	1.26	0.56	1.00	3.00	9,778
Sports Activityd	3.02	1.19	2.00	6.00	9,775
Other Activitiesd	15.83	2.97	13.00	39.00	9,192
Hrs. Homework/Weeka	2.13	0.52	1.00	3.00	10,085
Aptitude Composite	51.48	8.79	28.50	74.24	9,456
Hrs./Day Watching TV	4.90	1.69	1.00	7.00	9,940
Father's Educationa	5.50	3.50	1.00	11.00	9,537
Mother's Educationa	5.32	3.23	1.00	11.00	9,773
Family Incomea	4.52	2.13	1.00	8.00	9,273
Family Size	5.43	1.93	1.00	15.00	10,083
Post-Secondary Plans[b]	3.24	1.38	1.00	5.00	10,050
New Basics Courses	12.18	3.87	0.00	41.97	10,085
Male[c]					4,891
Female[c]					5,194
Hispanic					2,112
Native American					181
Asian/Pacific Islander					329
Black					1,284
White					6,166

Notes:

a. Variable values reported are categorical not raw data.
b. No plans=0, graduate or professional school=5
c. Male=1, female=0
d. Non-participant=0, participant=1, leader/officer=2. Sports and Other categories consist of composites of multiple subcategories. Vocational organizations was a single subcategory

Table 2
Standardized Regression Results for prediction of high school grade point average

Variable	Standardized Estimate	Probability
Vocational Activity[a]	.081	.001
Sports Activity[a]	.011	.258
Other Activities[a]	.113	.001
Hrs. Homework/Week[b]	.065	.001
Aptitude Composite	.417	.001
Hrs./Day Watching TV	.020	.028
Father's Education[b]	-.010	.347
Mother's Education[b]	-.025	.016
Family Income[b]	-.064	.001
Family Size	.024	.009
Post-Secondary Plans[c]	.139	.001
New Basics Courses	.102	.001
Sex[d]	-.162	.001
Hispanic[e]	.108	.427
Native American[e]	.062	.184
Asian/Pacific Islander[e]	.124	.042
Black[e]	.020	.852
White[e]	.173	.293

Analysis of Variance:

SOURCE	DF	SUM OF SQ	MEAN SQ	F	PROB>F
Model	18	1,139.15	63.29	280.42	.0001
Error	7,344	1,657.40	0.23		
Total	7,362	2,796.55			

R^2	0.407
Adj R^2	0.406

Notes:
a. Non-participant=0, participant=1, leader/officer=2. Sports and Other categories consist of composites of multiple subcategories. Vocational organizations was a single subcategory
b. Values reported are categorical not raw data.
c. No plans=0, graduate or professional school=5
d. Male=1, female=0
e. Each race is dummy-coded: race given=1, all others=0.

Multiple regression analysis of the model produced significant beta weights for all external variables except father's education, participation in sports, and the racial categories of black, white, Hispanic, and native American. Notably, an overall R^2 of .407 is reported for the model, see table 2.

The variable of interest, vocational student organization participation produced a significant contribution to R^2 ($p<.0001$), with a standardized regression coefficient (beta weight) of +0.081. Such a small beta weight could hardly be called monumental; however, in light of the current criticisms of extra-curricular participation, this is an important finding. Even when all of the other confounding variables were controlled by the regression procedure, participation in the vocational student organization contributed significantly and positively to the variation in student grades.

Educational Significance

There is a positive relationship between participation level in vocational student organizations and overall student grades for vocational students. The vocational education literature and common sense would support that. But there are also many other explanations for why that is true. The purpose of this study was to examine the relationship between that participation and student grades, while controlling for the effects of those confounding variables. That level of participation still produces a significant and positive contribution to success in school, as defined by student grades is important.

References Cited

Baly, I.E. (1984). Assessing the vocational education decision making patterns of low SES black male high school seniors: A test of two models. (Doctoral dissertation, University of California, Berkeley). Dissertation abstracts international, 45, 2850A.

Braddock, J.H. (1981). Race, athletics and educational attainment. Youth and Society, 12(3), 335-350.

Elder, J.D. (1984). The relationship between senior high school student involvement in extracurricular activities and student discipline problems. Unpublished doctoral dissertation, University of Akron, Ohio.

Jeffreys, B.J. (1987). Variables associated with cocurricular participation in vocational student organizations. Unpublished doctoral dissertation, Virginia Polytechnic Institute and State University.

McNamara, J.F.; Haensley, P.A.; Lupkowski, A.E.; & Edlind, E.P. (1985). The role of extracurricular activities in high school education: A chart essay on survey findings. Paper presented at the Annual Conference of the National Association for Gifted Children. (ERIC Document Reproduction Service No. ED 268 712).

National Opinion Research Center. (1984). High school and beyond 1980 sophomore cohort second follow-up: Data file users' guide. Report to the National Center for Educational Statistics, Contract No. 300-82-0273, Chicago.

Peterson, S.L. (1984). An analysis of United States high school seniors' extracurricular participation as predicted by self-concept, socioeconomic status, sex, race, and time spent at work. Unpublished doctoral dissertation, University of Akron, Ohio.

Smith, D.H. (1981). Finding beacons of success. Kappan. 63(3), 168.

Spady, W. (1970). Lament for the letterman: Effects of peer status and extracurricular activities on goals and achievement. American Journal of Sociology. 75(4), 680-702.

Spady, W. (1970). Status, achievement and motivation in the American High School. School Review, 79(3), 379-403.

Wolfle, L. M. (1985). Postsecondary educational attainment among whites and blacks. American Educational Research Journal. 22(4), 501-525.